UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

BCS SOFTWARE, LLC, Plaintiff v. **ITRON, INC.,** Defendant	**Case No.** 19-cv-728 **JURY TRIAL DEMANDED**

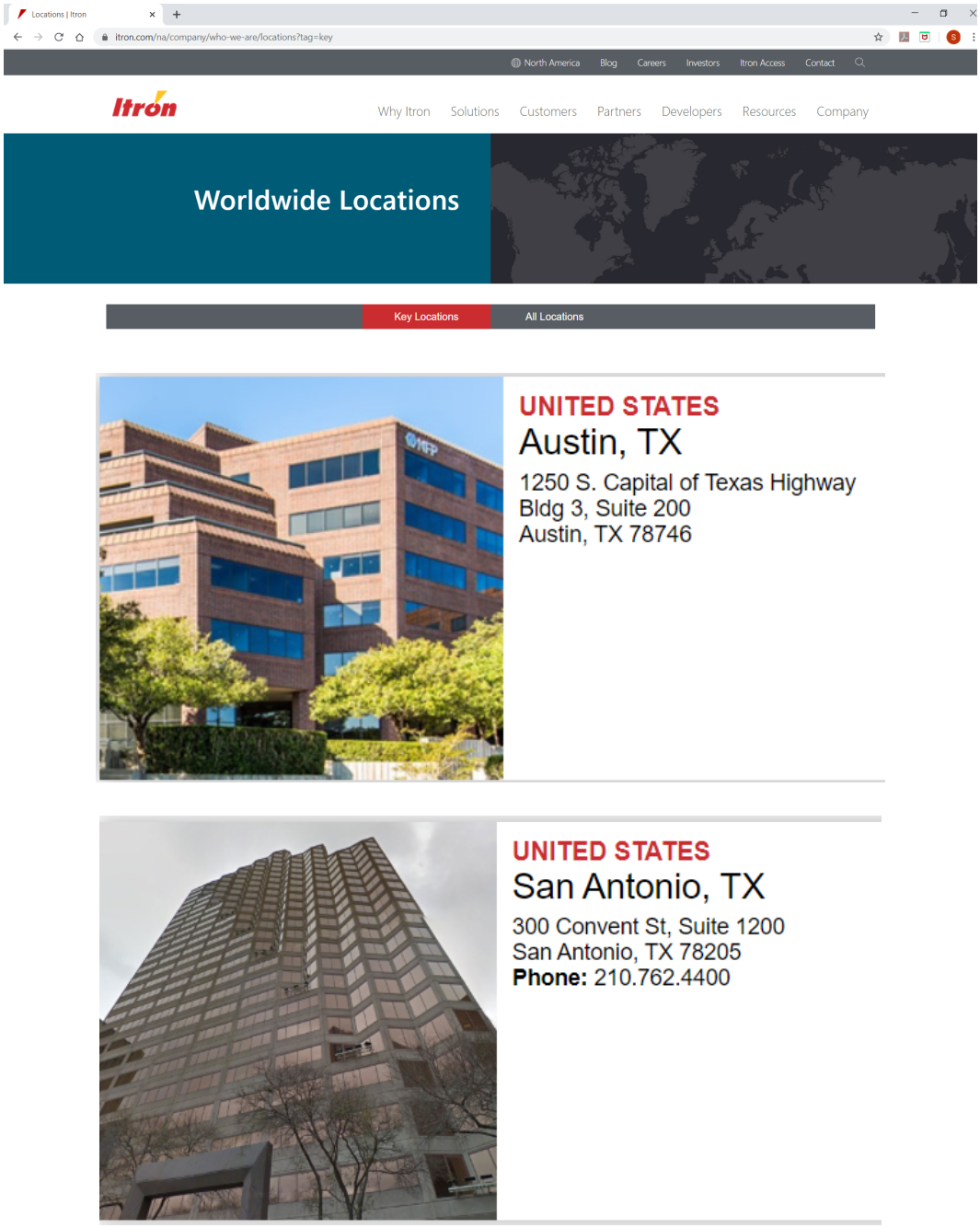
ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff BCS Software, LLC ("Plaintiff" or "BCS") hereby files this Original Complaint for Patent Infringement against Defendant Itron, Inc., and alleges, on information and belief, as follows:

THE PARTIES

1. BCS Software, LLC is a limited liability company organized and existing under the laws of the State of Texas with its principal place of business in Austin, Texas.

2. Upon information and belief, Defendant Itron, Inc. ("Defendant" or "Itron") is a Washington State corporation having multiple regular and established places of business located within this judicial district at: (i) 1250 South Capital of Texas Highway, Building 3, Suite 300, Austin, Texas 78746; and (ii) 300 Convent Street, Suite 1200, San Antonio, Texas 78205. Itron has appointed National Registered Agents, Inc., located at 1999 Bryan Street, Suite 900, Dallas, Texas 75201-3136, as its agent for service of process in Texas. Notably, the Austin, Texas location is identified by Itron as a "Key Worldwide Location."



Source: https://www.itron.com/na/company/who-we-are/locations?tag=key.

JURISDICTION AND VENUE

3. This action arises under the patent laws of the United States, 35 U.S.C. § 1, *et seq*. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

4. Defendant has committed acts of infringement in this judicial district.

5. On information and belief, Defendant maintains regular and systematic business interests in this district and throughout the State of Texas. Indeed, one of Defendant's "key worldwide locations" is located in this district. Moreover, Defendant maintains a second location in this district in San Antonio, Texas.

6. On information and belief, the Court has personal jurisdiction over Defendant because Defendant has committed, and continues to commit, acts of infringement in the state of Texas, has conducted business in the state of Texas, and/or has engaged in continuous and systematic activities in the state of Texas.

7. On information and belief, Defendant's instrumentalities that are alleged herein to infringe were and continue to be used, imported, offered for sale, and/or sold in the Western District of Texas.

8. On information and belief, Defendant voluntarily conducts business and solicits customers in the State of Texas, including customers within this District, and generates substantial revenue from customers located within this district and from the acts of infringement as carried out in this district. As such, the exercise of jurisdiction over Defendant would not offend the traditional notions of fair play and substantial justice.

9. Venue is proper in the Western District of Texas pursuant to 28 U.S.C. § 1400(b).

NOTICE OF BCS' PATENTS

10. BCS is owner by assignment of U.S. Patent No. 6,240,421 entitled "System, software and apparatus for organizing, storing and retrieving information from a computer database." A copy may be obtained at: https://patents.google.com/patent/US6240421B1/en?oq=6240421.

11. BCS is owner by assignment of U.S. Patent No. 6,421,821 entitled "Flow chart-based programming method and system for object-oriented languages." A copy may be obtained at:

https://patents.google.com/patent/US6421821B1/en?oq=6421821.

12. BCS is owner by assignment of U.S. Patent No. 6,438,535 entitled "Relational database method for accessing information useful for the manufacture of, to interconnect nodes in, to repair and to maintain product and system units." A copy may be obtained at: https://patents.google.com/patent/US6438535B1/en?oq=6438535.

13. BCS is owner by assignment of U.S. Patent No. 6,658,377 entitled "Method and system for text analysis based on the tagging, processing, and/or reformatting of the input text." A copy may be obtained at: https://patents.google.com/patent/US6658377B1/en?oq=6658377.

14. BCS is owner by assignment of U.S. Patent No. 6,662,179 entitled "Relational database method for accessing information useful for the manufacture of, to interconnect nodes in, to repair and to maintain product and system units." A copy may be obtained at: https://patents.google.com/patent/US6662179B2/en?oq=6662179.

15. BCS is owner by assignment of U.S. Patent No. 6,895,502 entitled "Method and system for securely displaying and confirming request to perform operation on host computer." A copy may be obtained at: https://patents.google.com/patent/US6895502B1/en?oq=6895502.

16. BCS is owner by assignment of U.S. Patent No. 7,200,760 entitled "System for persistently encrypting critical software data to control the operation of an executable software program." A copy may be obtained at: https://patents.google.com/patent/US7200760B2/en?oq=7200760

17. BCS is owner by assignment of U.S. Patent No. 7,302,612 entitled "High level operational support system." A copy may be obtained at: https://patents.google.com/patent/US7302612B2/en?oq=7302612.

18. BCS is owner by assignment of U.S. Patent No. 7,533,301 entitled "High level operational support system." A copy may be obtained at: https://patents.google.com/patent/US7533301B2/en?oq=7533301.

19. BCS is owner by assignment of U.S. Patent No. 7,730,129 entitled "Collaborative communication platforms." A copy may be obtained at: https://patents.google.com/patent/US7730129B2/en?oq=7730129.

20. BCS is owner by assignment of U.S. Patent No. 7,774,296 entitled "Relational database method for accessing information useful for the manufacture of, to interconnect nodes in, to repair and to maintain product and system units." A copy may be obtained at: https://patents.google.com/patent/US7774296B2/en?oq=7774296.

21. BCS is owner by assignment of U.S. Patent No. 7,840,893 entitled "Display and manipulation of web page-based search results." A copy may be obtained at: https://patents.google.com/patent/US7840893B2/en?oq=7840893.

22. BCS is owner by assignment of U.S. Patent No. 7,890,809 entitled "High level operational support system." A copy may be obtained at: https://patents.google.com/patent/US7890809B2/en?oq=7890809.

23. BCS is owner by assignment of U.S. Patent No. 7,895,282 entitled "Internal electronic mail system and method for the same." A copy may be obtained at: https://patents.google.com/patent/US7895282B1/en?oq=7895282."

24. BCS is owner by assignment of U.S. Patent No. 7,996,464 entitled "Method and system for providing a user directory." A copy may be obtained at: https://patents.google.com/patent/US7996464B1/en?oq=7996464.

25. BCS is owner by assignment of U.S. Patent No. 7,996,469 entitled "Method and system for sharing files over networks." A copy may be obtained at: https://patents.google.com/patent/US7996469B1/en?oq=7996469.

26. BCS is owner by assignment of U.S. Patent No. 8,171,081 entitled "Internal electronic mail within a collaborative communication system." A copy may be obtained at: https://patents.google.com/patent/US8171081B1/en?oq=8171081.

27. BCS is owner by assignment of U.S. Patent No. 8,176,123 entitled "Collaborative communication platforms." A copy may be obtained at: https://patents.google.com/patent/US8176123B1/en?oq=8176123.

28. BCS is owner by assignment of U.S. Patent No. 8,285,788 entitled "Techniques for sharing files within a collaborative communication system." A copy may be obtained at: https://patents.google.com/patent/US8285788B1/en?oq=8285788.

29. BCS is owner by assignment of U.S. Patent No. 8,554,838 entitled "Collaborative communication platforms." A copy may be obtained at: https://patents.google.com/patent/US8554838B1/en?oq=8554838.

30. BCS is owner by assignment of U.S. Patent No. 8,819,120 entitled "Method and system for group communications." A copy may be obtained at: https://patents.google.com/patent/US8819120B1/en?oq=8819120.

31. BCS is owner by assignment of U.S. Patent No. 8,984,063 entitled "Techniques for providing a user directory for communication within a communication system." A copy may be obtained at: https://patents.google.com/patent/US8984063B1/en?oq=8984063.

32. BCS is owner by assignment of U.S. Patent No. 9,396,456 entitled "Method and system for forming groups in collaborative communication system." A copy may be obtained at:

https://patents.google.com/patent/US9396456B1/en?oq=9396456.

33. Defendant, at least by the date of this Original Complaint, is on notice of the above patents owned by BCS.

U.S. PATENT NOS. 7,302,612, 7,533,301 AND 7,890,809

34. BCS is the owner, by assignment, of U.S. Patent No. 7,302,612 ("the '612 Patent"), U.S. Patent No. 7,533,301 ("the '301 Patent) and U.S. Patent No. 7,890,809 ("the '809 Patent"), each entitled HIGH LEVEL OPERATIONAL SUPPORT SYSTEM (hereinafter collectively referred to as "the Patents-in-Suit").

35. The '809 Patent issued on February 15, 2011, and is a continuation of the '301 Patent, which issued on May 12, 2009. The '301 Patent is a continuation of the '612 Patent, which issued on November 27, 2007. Thus, the Patents-in-Suit share a common specification.

36. The Patents-in-Suit are valid, enforceable, and were duly issued in full compliance with Title 35 of the United States Code.

37. The Patents-in-Suit were invented by Messrs. Blaine Nye and David Sze Hong.

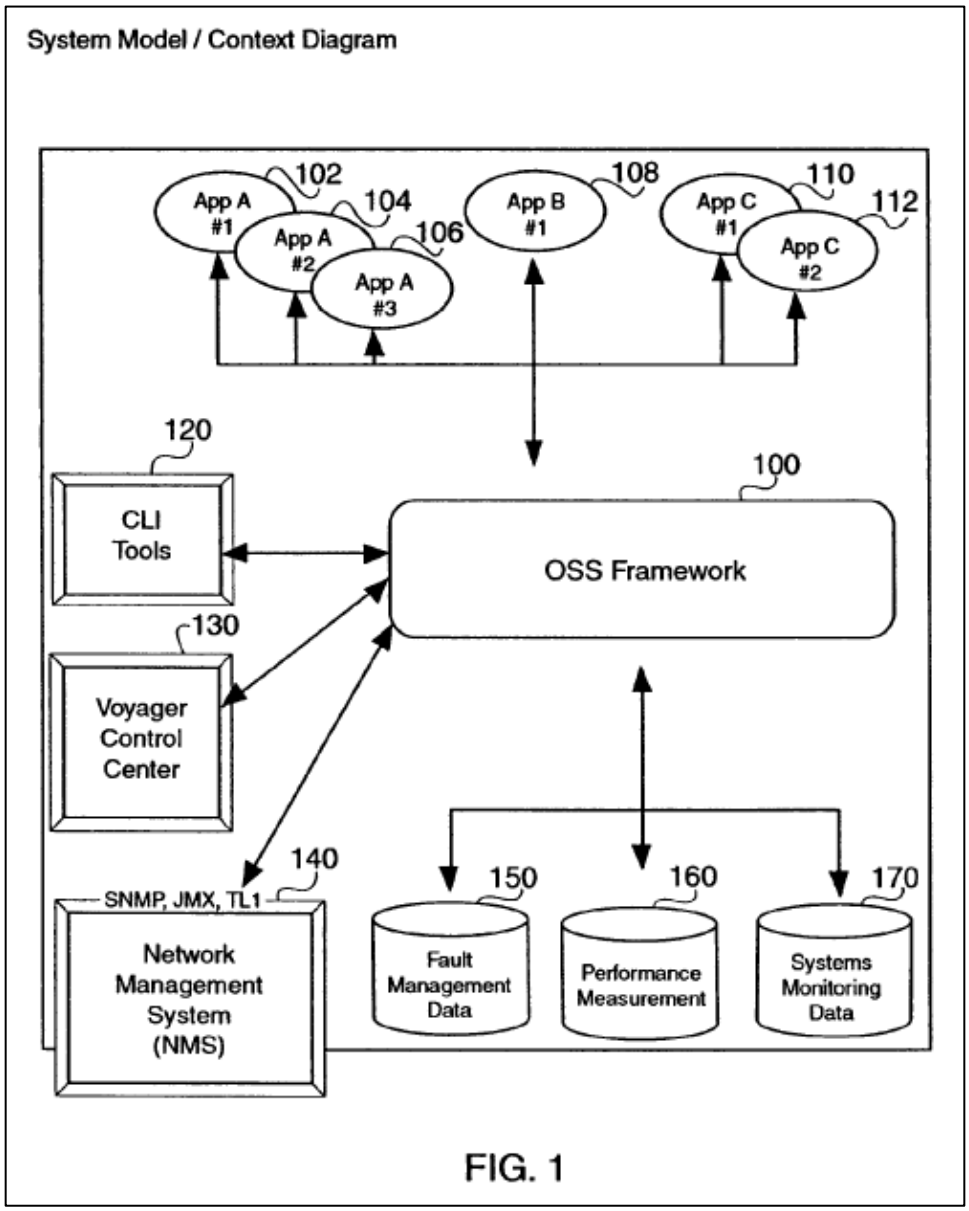
38. The priority date of each of the Patents-in-Suit is at least May 1, 2003.

39. The Patents-in-Suit relate to:

> A high-level Operational Support System (OSS) framework provides the infrastructure and analytical system to enable all applications and systems to be managed dynamically at runtime regardless of platform or programming technology. Applications are automatically discovered and managed. Java applications have the additional advantage of auto-inspection (through reflection) to determine their manageability. Resources belonging to application instances are associated and managed with that application instance. This provides operators the ability to not only manage an application, but its distributed components as well. They are presented as belonging to a single application instance node that can be monitored, analyzed, and managed. The OSS framework provides the platform-independent infrastructure that heterogeneous applications require to be monitored, controlled, analyzed and managed at runtime. New and legacy applications written in C++ or Java are viewed and manipulated identically with

zero coupling between the applications themselves and the tools that scrutinize them.

'809 Patent (Abstract).



Id. (Figure 1).

40. The field of the invention of the Patents-in-Suit is to improvements in "wireless communication carriers. More particularly, it relates to operational support system (OSS), application/systems management, and network management." *Id.*, col. 1:17-20.

41. As disclosed in the Patents-in-Suit, "[m]any network management technologies exist that allow operators to manage applications and devices at runtime. For instance, SNMP, TL1 and JMX each attempt to provide operators with the ability to manipulate and affect change at runtime." *Id*., col. 1:22-26.

42. As disclosed in the Patents-in-Suit, "[t]he fundamental of each is similar. It is to manipulate the objects of an application through messaging." *Id*., col. 1:26-27.

43. As disclosed in the Patents-in-Suit, "SNMP is the standard basic management service for networks that operate in TCP/IP environments. It is intended primarily to operate well-defined devices easily and does so quite successfully. However, it is limited to the querying and updating of variables." *Id*., col. 1:28-32.

44. As disclosed in the Patents-in-Suit, "Transaction Language 1 (TL1) is a set of ASCII-based instructions, or 'messages,' that an operations support system (OSS) uses to manage a network element (NE) and its resources. *Id*., col. 1:32-35.

45. As disclosed in the Patents-in-Suit, "JMX is a Java centric technology that permits the total management of objects: not only the manipulation of fields, but also the execution of object operations. It is designed to take advantage of the Java language to allow for the discovery and manipulation of new or legacy applications or devices." *Id*., col. 1:35-40.

46. As disclosed in the Patents-in-Suit, "Operational Support for enterprise applications is currently realized using a variety of technologies and distinct, separate services. For instance, network management protocols (SNMP, JMX, TL1, etc.) provide runtime configuration and some provide operation invocation, but these technologies are not necessarily geared toward applications." *Id*., col. 1:40-45.

47. As disclosed in the Patents-in-Suit, "[s]ome are language specific (e.g., JMX) and require language agnostic bridging mechanisms that must be implemented, configured and maintained. SNMP is generic (e.g., TL1 and SNMP) and very simple in nature, but it requires application developers to implement solutions to common OSS tasks on top of SNMP. *Id*., col. 1:46-51.

48. As disclosed in the Patents-in-Suit, "TL1 is also ASCII based and generic. However, while it is very flexible and powerful, it is another language that must be mastered, and it's nature is command line based. As a result, it is not intuitively based in presentation layer tools. While all the technologies have their respective benefits, they do not provide direct means of providing higher level OSS functionality. Conventionally, applications are monitored, analyzed and managed at runtime." *Id*., col. 1:52-59.

49. As disclosed in the Patents-in-Suit, one or more claims "provid[e] a high-level operational support system framework comprises monitoring a health of a plurality of applications. The health of the plurality of applications is assessed, and the health of the plurality of applications is analyzed, whereby each of the plurality of applications are managed dynamically at runtime regardless of a platform of each of the plurality of applications." *Id*., col. 1:64–2:3.

50. Consequently, the Patents-in-Suit improve the computer functionality itself and represents a technological improvement to the operation of computers.

51. The '809 Patent was examined by United States Patent Examiner Joshua Lohn. During the examination of the '809 Patent, the United States Patent Examiner searched for prior art in the following US Classifications: 714/38, 714/47, 719/320.

52. After conducting a search for prior art during the examination of the ‘809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 6,748,555 to Teegan et al as one of the most relevant prior art references found during the search.

53. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 6,862,698 to Shyu as one of the most relevant prior art references found during the search.

54. After conducting a search for prior art during the examination of the ‘809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 7,003,560 to Mullen et al as one of the most relevant prior art references found during the search.

55. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 7,100,195 to Underwood as one of the most relevant prior art references found during the search.

56. After conducting a search for prior art during the examination of the ‘809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2003/0037288 by Harper et al as one of the most relevant prior art references found during the search.

57. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2003/0204791 by Helgren et al as one of the most relevant prior art references found during the search.

58. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2004/0073566 by Trivedi as one of the most relevant prior art references found during the search.

59. After conducting a search for prior art during the examination of the '809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2004/0088401 by Tripathi et al as one of the most relevant prior art references found during the search.

60. After conducting a search for prior art during the examination of the '809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2005/0044535 by Coppert as one of the most relevant prior art references found during the search.

61. After conducting a search for prior art during the examination of the '809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 6,748,555 by Shyu as one of the most relevant prior art references found during the search.

DEFENDANT'S PRODUCTS

62. Upon information and belief, Defendant makes, uses, imports, sells, and/or offers for sale a multitude of products and services broadly defined under the so-called "OpenWay Platform," which is a family of products and services comprised of smart meters, software and communications infrastructure that combines individual features of an AMI system. "OpenWay" is an IPv6 based multi-application network that delivers applications such as the following accused instrumentalities to water, gas and electricity utilities: OpenWay Riva/Centron Meters, OpenWay Reporting System, OpenWay Control, OpenWay Operation Center, OpenWay Collection Engine, OpenWay Riva Security, OpenWay Riva Active Grid, and OpenWay Riva Adaptive Communications Technology. These applications and products provide security and network management tools to dynamically prioritize network traffic. Individually and collectively, the foregoing are the "Accused Instrumentalities"[1], which are broadly described in

[1] The Accused Instrumentalities further include any and all products of the Defendant, including but not limited to hardware and/or software products, which operate in substantially similar fashion as the specifically identified products herein.

functional terms by the Itron website (www.itron.com), as exemplified by the following references:

- https://www.itron.com/na/industries/electricity/openway-riva (**"REF1"**);
- https://www.itron.com/fr/-/media/itron/documents/openway-riva-white-paper.pdf?la=fr-FR (**"REF2"**);
- https://www.itron.com/na/-/media/itron/documents/brochures/101493mp-01-openway-riva-generic-brochureweb.pdf?la=en-US (**"REF3"**);
- https://www.youtube.com/watch?v=lEQToZ9yGn8 (**"REF4"**);
- https://www.itron.com/na/-/media/itron/documents/openway-riva-streetlight-solution.pdf (**"REF5"**);
- https://www.youtube.com/watch?reload=9&v=j-PMdhk-13E **("REF6")**;
- https://www.itron.com/na/-/media/itron/integration/specsheet/101504wp01streetlightspecifications.pdf **("REF7")**;
- https://www.itron.com/-/media/itron/documents/industry-smart-cities/itron-streetlight-vision.pdf **("REF8")**;
- https://www.itron.com/-/media/feature/products/documents/brochure/openway-riva-brochure.pdf **("REF9")**;
- https://www.itron.com/-/media/feature/products/documents/brochure/openway-brochure.pdf **("REF10")**;
- https://www.itron.com/-/media/feature/products/documents/white-paper/active-grid-white-paper.pdf **("REF11")**;
- https://www.itron.com/na/solutions/product-catalog/openway-operations-center **("REF12")**;
- https://www.itron.com/na/solutions/product-catalog/openway-operations-center#images-individual-1-1 **("REF13")**;
- https://www.itron.com/na/solutions/product-catalog/openway-operations-center#images-individual-1-5 **("REF14")**;

- https://www.itron.com/na/solutions/product-catalog/openway-operations-center#images-individual-1-6 **("REF15")**;
- https://www.itron.com/-/media/feature/products/documents/spec-sheet/openway-riva-centron-meter.pdf **("REF16")**;
- https://www.itron.com/-/media/feature/products/documents/spec-sheet/openway-riva-act-module-for-the-cisco-connected-grid-router.pdf **("REF17")**;
- https://www.itron.com/-/media/feature/products/documents/spec-sheet/openway-centron-polyphase.pdf **("REF18")**;
- https://www.itron.com/-/media/feature/products/documents/white-paper/openway-fatal-error-recovery.pdf **("REF19")**;
- http://emrabc.ca/wp-content/uploads/2011/01/OpenWay_SmartGridCellRouter.pdf **("REF20")**;
- http://www.stopsmartmetersbc.com/wp-content/uploads/2014/11/OpenWay-Tools-User-Guide.pdf **("REF21")**;
- http://www.stopsmartmetersbc.com/wp-content/uploads/2014/11/OpenWay-Tools-User-Guide.pdf **("REF22")**; and
- https://www.itron.com/-/media/feature/products/documents/spec-sheet/openway-centron-cellular-lte.pdf **("REF23")**.

63. The information contained in References **REF1-REF23** is incorporated by reference as if set forth fully herein.

64. The information contained in reference **REF1** accurately describes the operation and functionality of one or more Accused Instrumentality.

65. The information contained in reference **REF2** accurately describes the operation and functionality of one or more Accused Instrumentality.

66. The information contained in reference **REF3** accurately describes the operation and functionality of one or more Accused Instrumentality.

67. The information contained in reference **REF4** accurately describes the operation and functionality of one or more Accused Instrumentality.

68. The information contained in reference **REF5** accurately describes the operation and functionality of one or more Accused Instrumentality.

69. The information contained in reference **REF6** accurately describes the operation and functionality of one or more Accused Instrumentality.

70. The information contained in reference **REF7** accurately describes the operation and functionality of one or more Accused Instrumentality.

71. The information contained in reference **REF8** accurately describes the operation and functionality of one or more Accused Instrumentality.

72. The information contained in reference **REF9** accurately describes the operation and functionality of one or more Accused Instrumentality.

73. The information contained in reference **REF10** accurately describes the operation and functionality of one or more Accused Instrumentality.

74. The information contained in reference **REF11** accurately describes the operation and functionality of one or more Accused Instrumentality.

75. The information contained in reference **REF12** accurately describes the operation and functionality of one or more Accused Instrumentality.

76. The information contained in reference **REF13** accurately describes the operation and functionality of one or more Accused Instrumentality.

77. The information contained in reference **REF14** accurately describes the operation and functionality of one or more Accused Instrumentality.

78. The information contained in reference **REF15** accurately describes the operation and functionality of one or more Accused Instrumentality.

79. The information contained in reference **REF16** accurately describes the operation and functionality of one or more Accused Instrumentality.

80. The information contained in reference **REF17** accurately describes the operation and functionality of one or more Accused Instrumentality.

81. The information contained in reference **REF18** accurately describes the operation and functionality of one or more Accused Instrumentality.

82. The information contained in reference **REF19** accurately describes the operation and functionality of one or more Accused Instrumentality.

83. The information contained in reference **REF20** accurately describes the operation and functionality of one or more Accused Instrumentality.

84. The information contained in reference **REF21** accurately describes the operation and functionality of one or more Accused Instrumentality.

85. The information contained in reference **REF22** accurately describes the operation and functionality of one or more Accused Instrumentality.

86. The information contained in reference **REF23** accurately describes the operation and functionality of one or more Accused Instrumentality.

87. The "OpenWay" product family name has been federally registered as a Trademark by Itron, as Serial Number 86357851, for the following defined goods and services: "Data collection computer and communication network systems comprised of computer hardware, computer operating software and computer software for data collection applications, namely, automated meter reading, distribution automation, two-way communications between networks

and utility meters, and demand side management applications via the Internet, Intranet, Extranets, radio frequency networks, wireless networks, telephone lines, and integrated communications networks, namely, public switched telephone networks, virtual private networks, private networks, public networks, and cellular networks, all for use in the utility, power, and energy industries; Meter interface units comprised of digital, mechanical and optical sensors, encoders and transmitters; Inbound, outbound, two-way communication systems, namely, computer hardware, computer operating software and computer software for data collection and remote programming applications, namely, two-way automated meter reading, distribution automation, remote communications between networks and between and among utility meters, and demand side management applications via the Internet, Intranet, Extranets, radio frequency networks, wireless networks, telephone lines, and integrated communications networks, namely, public switched telephone networks, IP-based public networks, virtual private networks, private networks, broadband over powerline networks, public networks and cellular networks for energy data, and other utility meter monitoring points; Telephone, cellular and radio transceivers, intelligent communication adapters, and switch points for use in the utility, power and energy industries." The date of first alleged use in commerce of such mark on the part of Itron is July 31, 2006. Source (USPTO TESS System): http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4808:zrrvvi.3.5.

COUNT I
(Infringement of U.S. Patent No. 7,890,809)

88. BCS incorporates the above paragraphs by reference.

89. Itron has been on notice of the '809 Patent at least as early as the date it received service of this Original Complaint.

90. Upon information and belief, Itron has infringed and continues to infringe at least Claims 1-9 of the ’809 Patent by making, using, importing, selling, and/or, offering for sale the Accused Instrumentalities.

91. Defendant, with knowledge of the ’809 Patent, infringes the ’809 Patent by inducing others to infringe the ’809 Patent. In particular, Defendant intends to induce its customers to infringe the ’809 Patent by encouraging its customers to use the Accused Instrumentalities in a manner that results in infringement.

92. Defendant also induces others, including its customers, to infringe the ’809 Patent by providing technical support for the use of the Accused Instrumentalities.

93. Upon information and belief, at all times Defendant owns and controls the operation of the Accused Instrumentalities in accordance with an end user license agreement.

94. By way of example, the Accused Instrumentalities infringes Claim 1 of the ’809 Patent by providing a method of providing a high level support framework by monitoring from a physical server a health of a plurality of client applications and a health of said plurality of client applications' distributed components, using a common monitoring protocol, said monitoring being independent of a programming technology of said plurality of client applications and respective distributed components, by assessing said health of said plurality of client applications and said respective distributed components, and by associating said health of said plurality of client applications and said respective distributed components as belonging to a single application node.

The OpenWay solution is a blend of smart meters, software and communications infrastructure that combines individual features of an AMI system to deliver business value to utilities. OpenWay delivers metering applications over multiple communications substrates using the ANSI C12.22 protocol. All OpenWay meters include a high-powered ZigBee® transceiver for reliable two-way communications with in-home devices. In the back office, the OpenWay Collection Engine software communicates with a number of industry-leading meter data management (MDM) and demand response management (DRM) systems through a publicly available service-oriented architecture (SOA) interface. By focusing the Collection Engine on reliable, scalable and secure management of network communications and data delivery, a wide variety of DR systems and devices can leverage OpenWay to deliver DR programs and benefits to various market participants.

At the solution level, OpenWay enables DR by:

- Providing two-way communications for delivering DR event messages and managing DR infrastructure
- Providing advanced metering support for DR programs
- Integrating with industry-leading DR management systems, including Tendril and Comverge
- Leveraging in-home communications for a variety of DR enabling and automating devices

Itron partners integrate with OpenWay to provide the following DR program management features:

- Program design
- Event execution
- Analytics for program effectiveness

OpenWay is designed to be a flexible and scalable communications platform for enabling DR solutions. A single OpenWay network may be used with different DRM platforms. By remaining agnostic to DR programs managed by upstream systems and focused instead on application delivery, OpenWay does not limit the deployment possibilities of DR programs or system designs. As a result, OpenWay maximizes the value of a utility's existing technology investment and ensures that future program design will not be impeded by system assumptions hard-wired into the AMI network.

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/openway-demand-response-white-paper.pdf.

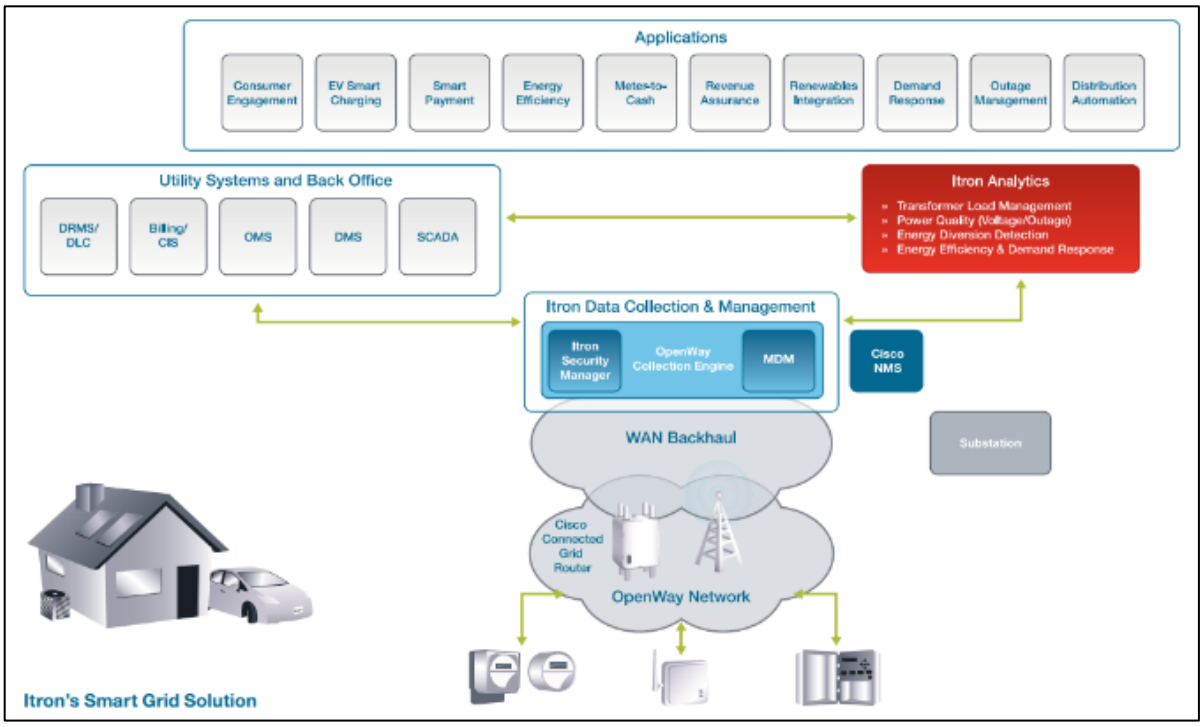
Action Manager

OpenWay Operations Center

The performance and value of any AMI operations solution is not measured by just identifying problems that occur in the field, but by the swift and efficient resolution of these problems. By attacking operational challenges using a well-coordinated operations team applying an effective set of investigative and corrective workflows, you can ensure that your AMI system is delivering strong business value consistently day in and day out.

The OpenWay Operations Center Action Manager application provides a highly innovative tool and framework to manage—and even automate—resolution of all types of exceptions and incidents at scale. Action Manager's framework provides the ability to receive externally detected faults from source systems and, based on a configurable set of priority rules, progress those faults through a designated workflow to ensure the problems are resolved in a timely, efficient and consistent manner. These workflows include both manual steps performed by individual personnel as well as automated actions executed by Action Manager. Together, these make up a logical, path-based progression that assesses state, investigates the problem and applies the appropriate corrective action.

Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-operations-center--action-manager.pdf.



Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-brochure.pdf.

OpenWay®

Reporting System

Just as the meters in networks are becoming smarter, the tools and systems used to drive the business and collect data from those meters are becoming smarter, too. The OpenWay Reporting System (ORS), part of the OpenWay software suite, increases utility business intelligence by providing comprehensive insight into deployment, operational and network key performance indicators.

ORS helps utility representatives understand the operational performance of their smart grid and advanced metering infrastructure (AMI) implementations.

As a business intelligence tool, ORS:

- Collects and correlates data from the disparate systems used to support advanced metering, reporting overall system performance
- Enables utilities to modify and manipulate various data views to better understand system performance without disrupting mission-critical processes
- Provides real-world views of problematic areas within the network. IT, telecom and operational managers all benefit from the additional insight provided by ORS.

Although system performance is critical within the OpenWay infrastructure, it is equally important to address and resolve systematic errors and exceptions after data aggregation occurs on multiple systems. Identifying issue trends by priority and categorization through perspective dashboards will assist utility personnel in addressing these exceptions promptly and tracking the progress of their investigation.

With ORS, utilities will have the ability to:

- Correlate data from a host of systems, applications, and devices specific to smart metering for cost effective and flexible centralized business intelligence reporting
- Maintain flexible issue tracking, trending, and aging of endpoint and relay exceptions, enabling quick identification of repeating issues that may impact operations
- Configure prioritization and filteringof endpoint communication exceptions for desktop and field investigations thus enhancing the customer service experience
- Access granular details captured from OpenWay network devices (routers, extenders, ZigBee® devices and smart meters)
- Access rapid analysis of aggregated AMI data (interrogation statistics, endpoint events and exceptions) via the Microsoft OLAP cube
- Maintain a flexible, scalable platform that can evolve and adapt over time as business and operational requirements evolve

OpenWay Reporting System provides the business intelligence you need to leverage the benefits of the smart grid.

Source: https://www.itron.com/-/media/feature/products/documents/spec-sheet/openway-reporting-system.pdf.

COMPREHENSIVE, END-TO-END SECURITY

Itron views security as the most critical and foundational concern in defining requirements of our smart grid-enabling architectures. Leveraging our breadth of experience in AMI deployments and projects across the globe, Itron and our strategic partner Cisco designed OpenWay Riva with an end-to-end integrated security solution using a defense-in-depth approach, where multiple layers of protection are strategically located throughout the multi-service architecture to provide the industry's most comprehensive, unified security available today.

This architecture delivers a true multi-purpose, secure communications platform for utilities and cities and protects the integrity of data, communications, and controls in an open, multi-service, multi-protocol network environment.

An iterative design process ensures that all possible threats have been addressed and mitigating measures are built into the OpenWay Riva solution. The benefit of this approach is the increased security of the system.

The OpenWay Riva solution was designed to support gas, water, electricity and smart cities by providing increased functionality, visibility and management, along with increased security. OpenWay Riva provides layered security controls and management to protect the multi-service IPv6 field area network (FAN) and all the devices and applications that run on it.

SECURITY AT THE NETWORK LAYER

The multi-service IPv6 network provides consistent security controls for all utility applications using the FAN. The FAN architecture provides unprecedented:

Access Control:

Strong authentication of nodes is achieved by taking full advantage of a set of open standards including IEEE 802.1x, Extensible Authentication Protocol (EAP) and Remote Authentication Dial-In User Service (RADIUS). This "white-listing" approach requires that every device joining the IPv6 network be authenticated before being allowed access to the network and smart metering system. Field area routers, along with intermediate meters, pass on a new device's credentials to the centralized Authentication, Authorization and Accounting (AAA) server. Once authenticated, the new device is then allowed to join the network, provided with an IPv6 address and mesh key, and will be authorized to communicate with other nodes.

Data Integrity, Confidentiality, Privacy:

The FAN employs network-layer encryption (IPsec with AES encryption) in the Wide Area Network (WAN) and link-layer encryption (AES on IEEE 802.15.4g or IEEE 1901.2) in the Neighborhood Area Network (NAN). This design choice preserves network visibility into the traffic at the router and enables use of IP-based techniques of multicast, network segmentation, and quality of service (QoS). It also allows smart meters and other endpoints to be low-cost constrained nodes that only do link-layer encryption while the field area router does both network-layer and link-layer encryption. Additional protection at the application-layer is provided by Itron's enhanced security architecture which provides confidentiality, message integrity and proof of origin (digitally signed firmware images or digitally signed commands as part of application protocols such as DLMS/COSEM) between the headend and the meter register itself.

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Not Just Possible; Practical and Cost-effective

All of these needs and opportunities – making our energy and water infrastructure more efficient, more reliable and less wasteful, and making our cities more functional, livable and sustainable – are readily achievable if we apply the right technology to approach problems in new ways in the Internet of Things (IoT) age. At Itron, we call this the Active Grid. It's much more than smart metering and it's more than smart grid. It encompasses electricity, gas, water and smart cities, and an entirely new frontier of opportunity.

The Active Grid leverages significant recent advancements in Internet of Things (IoT) technology, including distributed intelligence; machine-to-machine communications; multi-application network architecture; cloud computing; data analytics; and a new generation of battery-powered edge devices and sensors to deliver an entirely new level of awareness into the state of the distribution network. All this means we can achieve resource management outcomes than were simply not possible just a few years ago.

One Network, Many Applications

First, the Active Grid requires a unified, scalable, multi-purpose IoT network infrastructure for smart utilities and cities. This means that once the network is deployed, it's very easy and cost effective to expand the value of the network investment over time by adding new capabilities. This standards-based IPv6 multi-application network separates the network infrastructure from the devices and applications that run on it. This means that new devices and applications can be added easily to the network, just like a new laptop or a printer would be added to an enterprise-class IT network. It also provides standardized, robust security, state-of-the-art network management and quality of service to optimize network operations and dynamically prioritize network traffic based on application and business requirements for an IoT world. All while utilizing a common and existing IT skill set to keep operations simple and support costs under control.

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/active-grid-white-paper.pdf.

As migration toward urban centers increases, cities are under increasing pressure to manage resources more effectively, and utilize new technology to make the urban landscape more livable, sustainable and economically vibrant. Today's challenges require a solution built for the Internet of Things world. Itron calls this the **Active Grid** or **Active Network** – both referring to the infrastructure being utilized by electric, water, and gas utilities and smart cities. The Active Grid leverages significant advancements in IoT technology, including distributed intelligence; software-defined communications; multi-application networks; cloud computing; data analytics; and a new generation of battery-powered edge devices and sensors to achieve new and better outcomes that were simply not possible just a few years ago.

These technologies come together in Itron's OpenWay Riva — an IoT solution that delivers new and differentiating value to enable smart utilities and cities. Utility smart metering may often provide the initial impetus for network infrastructure investment, but the benefit stream can be broadened significantly and at a manageable incremental cost with the right building blocks in place. The OpenWay Riva IoT solution was developed on four key tenets that, when applied together, redefine what is possible for the Active Grid.

ONE MULTI-PURPOSE NETWORK, MANY APPLICATIONS

The OpenWay Riva solution provides utilities and cities with a unified, scalable, multi-purpose IoT network infrastructure. This means that once the network is deployed, it's easy and cost effective to expand the value of the network investment over time. This standards-based IPv6 multi-application network, jointly developed by Itron and Cisco, separates the network infrastructure from the devices and applications that run on it. This means that new devices and applications can be added easily to the network, just like a new laptop or a printer would be added to an enterprise-class IT network. It also provides standardized, robust security; state-of-the-art network management tools; and quality of service to dynamically prioritize network traffic based on application and business requirements for an IoT world — all while utilizing a common and existing IT skill set to keep operations simple and support costs under control.

As previously discussed, Itron is actively developing new distributed analytic applications for water, electricity, gas and smart city use cases. In the Active Grid smart metering is just one app running on the multi-purpose network.

OPEN ECOSYSTEM OF APPLICATION INNOVATORS

Itron's networks have been architected to provide an open application, interoperable environment that enables third-parties to embed IoT communications into their devices, or to develop apps to run on the platform. Itron's Partner Ecosystem provides a common end-to-end engagement platform that includes hardware and software development kits to help solution providers enable their solutions to perform on Itron networks. This robust ecosystem of developers and applications means that utilties and cities are not reliant on a single vendor for product innovations. Itron is committed to helping a broad variety of device and sensor manufacturers work more easily together to bring new applications and greater value faster to market for our customers.

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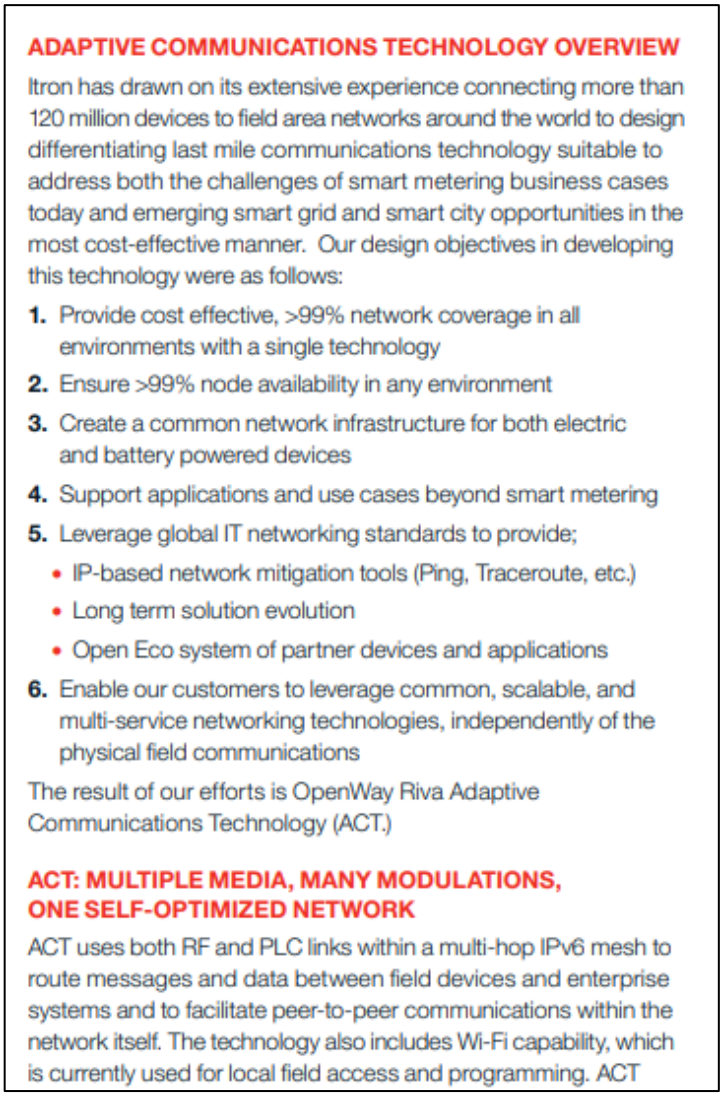


ADAPTIVE COMMUNICATIONS TECHNOLOGY OVERVIEW

Itron has drawn on its extensive experience connecting more than 120 million devices to field area networks around the world to design differentiating last mile communications technology suitable to address both the challenges of smart metering business cases today and emerging smart grid and smart city opportunities in the most cost-effective manner. Our design objectives in developing this technology were as follows:

1. Provide cost effective, >99% network coverage in all environments with a single technology
2. Ensure >99% node availability in any environment
3. Create a common network infrastructure for both electric and battery powered devices
4. Support applications and use cases beyond smart metering
5. Leverage global IT networking standards to provide;
   - IP-based network mitigation tools (Ping, Traceroute, etc.)
   - Long term solution evolution
   - Open Eco system of partner devices and applications
6. Enable our customers to leverage common, scalable, and multi-service networking technologies, independently of the physical field communications

The result of our efforts is OpenWay Riva Adaptive Communications Technology (ACT.)

ACT: MULTIPLE MEDIA, MANY MODULATIONS, ONE SELF-OPTIMIZED NETWORK

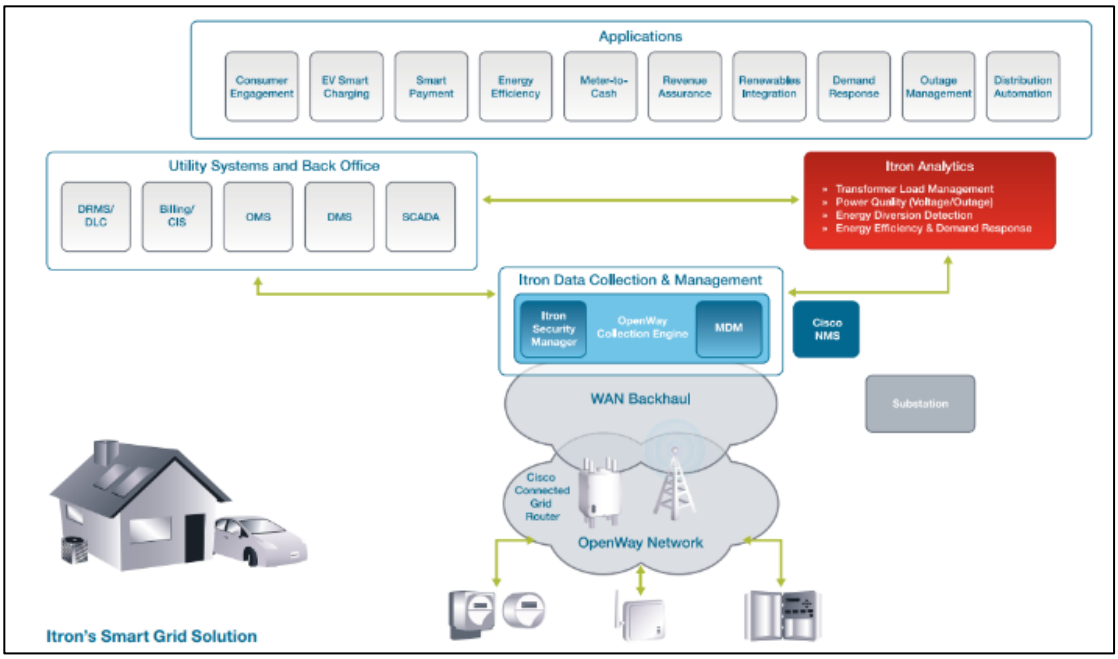
ACT uses both RF and PLC links within a multi-hop IPv6 mesh to route messages and data between field devices and enterprise systems and to facilitate peer-to-peer communications within the network itself. The technology also includes Wi-Fi capability, which is currently used for local field access and programming. ACT

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/openway-riva-adaptive-communications-technology.pdf.

95. For example, the Accused Instrumentalities comprise smart meters, software and communications infrastructure that combines individual features of an AMI system. OpenWay is an IPv6 based multi-application network that delivers applications such as OpenWay Reporting System, OpenWay Control, OpenWay Operation Center, OpenWay Collection Engine, OpenWay Riva Security, OpenWay Riva Active Grid, OpenWay Riva Adaptive

Communications Technology to water, gas and electricity utilities. These applications provide security and network management tools to dynamically prioritize network traffic.

96. The Accused Instrumentalities perform (or otherwise contribute to, and/or Defendant induces others to perform) the step of monitoring from a physical server a health of a plurality of client applications and a health of said plurality of client applications distributed components, using a common monitoring protocol, said monitoring being independent of a programming technology of said plurality of client applications and respective distributed components. This element is infringed literally, or in the alternative, under the doctrine of equivalents. For example, OpenWay comprises applications such as Active Grid and Operations Center. Active grid utilizes IoT technology including machine-to-machine communications, multi-application network architecture, cloud computing and data analytics to provide resource management. OpenWay Operations Center acts as an operational hub between the metering device population and the utility back office systems and processes, such as meter data management, outage management, distribution automation and load control. Distributed components for these applications include grid devices, sensors and smart meters such as OpenWay Riva Centron meter, Adaptive Communications Technology Module and OpenWay Centron polyphase meter. The health of applications (Activation ID and Activation status) and health of corresponding distributed components (such as grid device and sensor status, Sensor ID, voltage, wattage and current level of meters) is monitored using OpenWay ("common monitoring protocol"). Upon information and belief, the monitoring is independent of a programming technology of said plurality of client applications and respective distributed components.

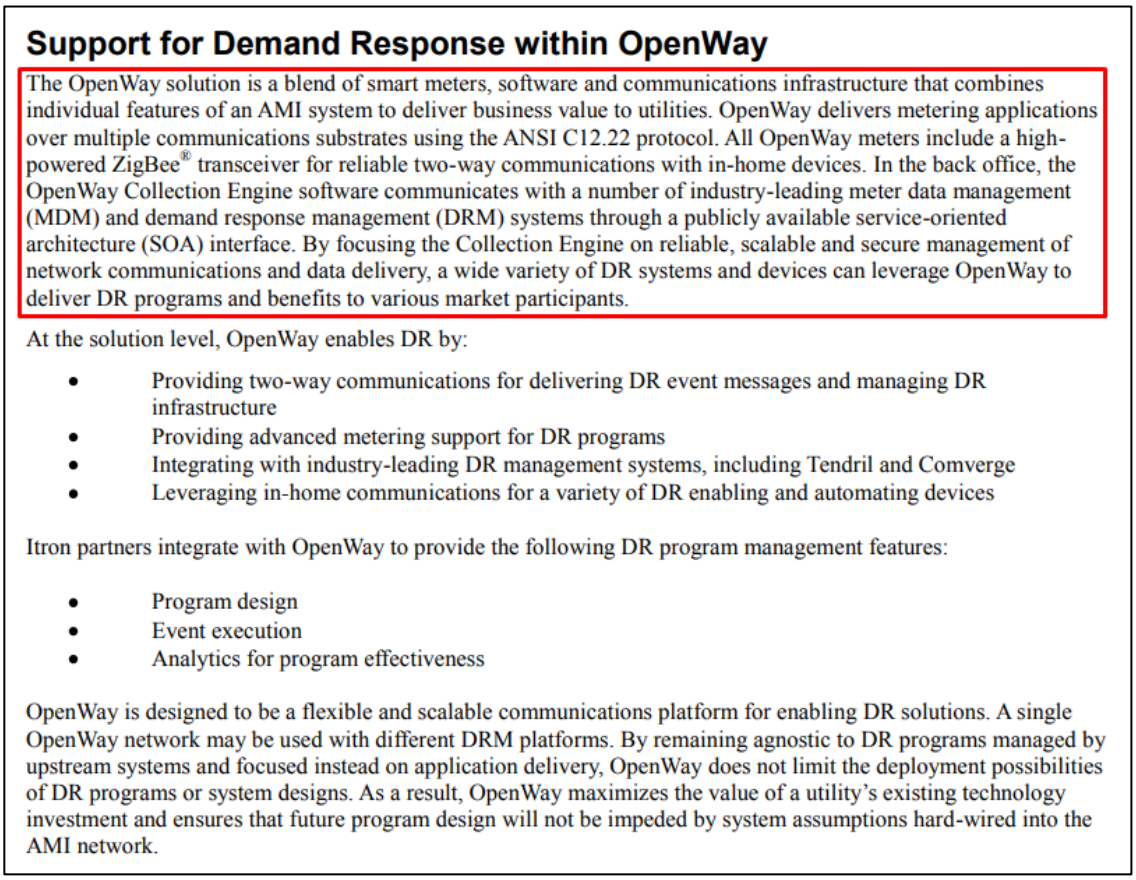


Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-brochure.pdf.

97. The Accused Instrumentalities perform the step of assessing said health of said plurality of client applications and said respective distributed components. For example, OpenWay assesses health of OpenWay Riva Active Grid and OpenWay Operations Center ("applications") and respective distributed components (sensors, meters and communication modules). The health value of applications comprises of values such as Application ID and Activation status of particular application. Further, health of corresponding distributed components comprises of grid device and sensor status, Sensor ID, voltage, wattage and current level of meters.

98. The Accused Instrumentalities further perform the step of associating said health of said plurality of client applications and said respective distributed components as belonging to a single application node. For example, OpenWay analyzes all the collected data from sensors, meters and Advanced Metered Infrastructure (AMI). The health of the applications such as

OpenWay Operations Center and its corresponding components (meters) is displayed on the OpenWay dashboard ("application node").



Support for Demand Response within OpenWay

The OpenWay solution is a blend of smart meters, software and communications infrastructure that combines individual features of an AMI system to deliver business value to utilities. OpenWay delivers metering applications over multiple communications substrates using the ANSI C12.22 protocol. All OpenWay meters include a high-powered ZigBee® transceiver for reliable two-way communications with in-home devices. In the back office, the OpenWay Collection Engine software communicates with a number of industry-leading meter data management (MDM) and demand response management (DRM) systems through a publicly available service-oriented architecture (SOA) interface. By focusing the Collection Engine on reliable, scalable and secure management of network communications and data delivery, a wide variety of DR systems and devices can leverage OpenWay to deliver DR programs and benefits to various market participants.

At the solution level, OpenWay enables DR by:

- Providing two-way communications for delivering DR event messages and managing DR infrastructure
- Providing advanced metering support for DR programs
- Integrating with industry-leading DR management systems, including Tendril and Comverge
- Leveraging in-home communications for a variety of DR enabling and automating devices

Itron partners integrate with OpenWay to provide the following DR program management features:

- Program design
- Event execution
- Analytics for program effectiveness

OpenWay is designed to be a flexible and scalable communications platform for enabling DR solutions. A single OpenWay network may be used with different DRM platforms. By remaining agnostic to DR programs managed by upstream systems and focused instead on application delivery, OpenWay does not limit the deployment possibilities of DR programs or system designs. As a result, OpenWay maximizes the value of a utility's existing technology investment and ensures that future program design will not be impeded by system assumptions hard-wired into the AMI network.

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/openway-demand-response-white-paper.pdf.

99. BCS has been damaged by Defendant's infringement of the '809 Patent.

COUNT II
(Infringement of U.S. Patent No. 7,302,612)

100. BCS incorporates the above paragraphs by reference.

101. Itron has been on notice of the '612 Patent at least as early as the date it received service of this Original Complaint.

102. Upon information and belief, Itron has infringed and continues to infringe Claims 1-20 of the ’612 Patent by making, using, importing, selling, and/or, offering for sale the Accused Instrumentalities.

103. Defendant, with knowledge of the ’612 Patent, infringes the ’612 Patent by inducing others to infringe the ’612 Patent. In particular, Defendant intends to induce its customers to infringe the ‘612 Patent by encouraging its customers to use the Accused Instrumentalities in a manner that results in infringement.

104. Defendant also induces others, including its customers, to infringe the ’612 Patent by providing technical support for the use of the Accused Instrumentalities.

105. Upon information and belief, at all times Defendant owns and controls the operation of the Accused Instrumentalities in accordance with an end user license agreement.

106. By way of example, the Accused Instrumentalities infringe Claim 1 of the ’612 Patent by providing a method of providing a high-level operational support system framework by monitoring a health of a plurality of applications using a common monitoring protocol, at least two of the plurality of applications being based on different programming technology.

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Action Manager

OpenWay Operations Center

The performance and value of any AMI operations solution is not measured by just identifying problems that occur in the field, but by the swift and efficient resolution of these problems. By attacking operational challenges using a well-coordinated operations team applying an effective set of investigative and corrective workflows, you can ensure that your AMI system is delivering strong business value consistently day in and day out.

The OpenWay Operations Center Action Manager application provides a highly innovative tool and framework to manage—and even automate—resolution of all types of exceptions and incidents at scale. Action Manager's framework provides the ability to receive externally detected faults from source systems and, based on a configurable set of priority rules, progress those faults through a designated workflow to ensure the problems are resolved in a timely, efficient and consistent manner. These workflows include both manual steps performed by individual personnel as well as automated actions executed by Action Manager. Together, these make up a logical, path-based progression that assesses state, investigates the problem and applies the appropriate corrective action.

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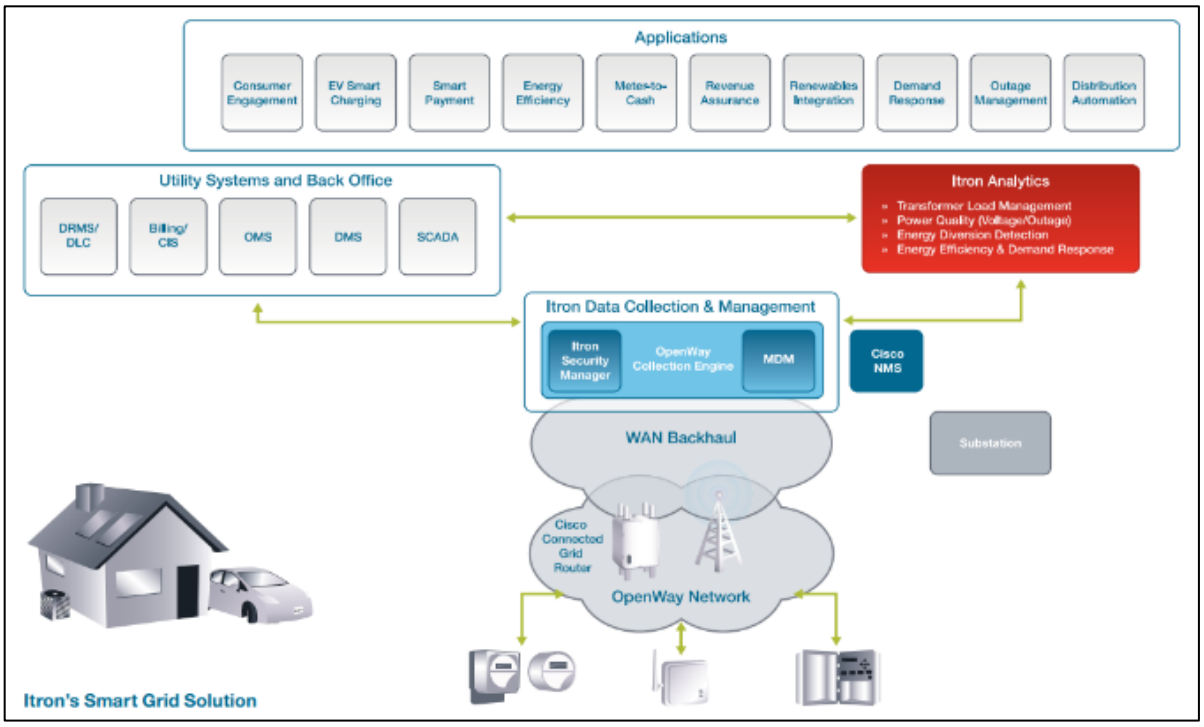

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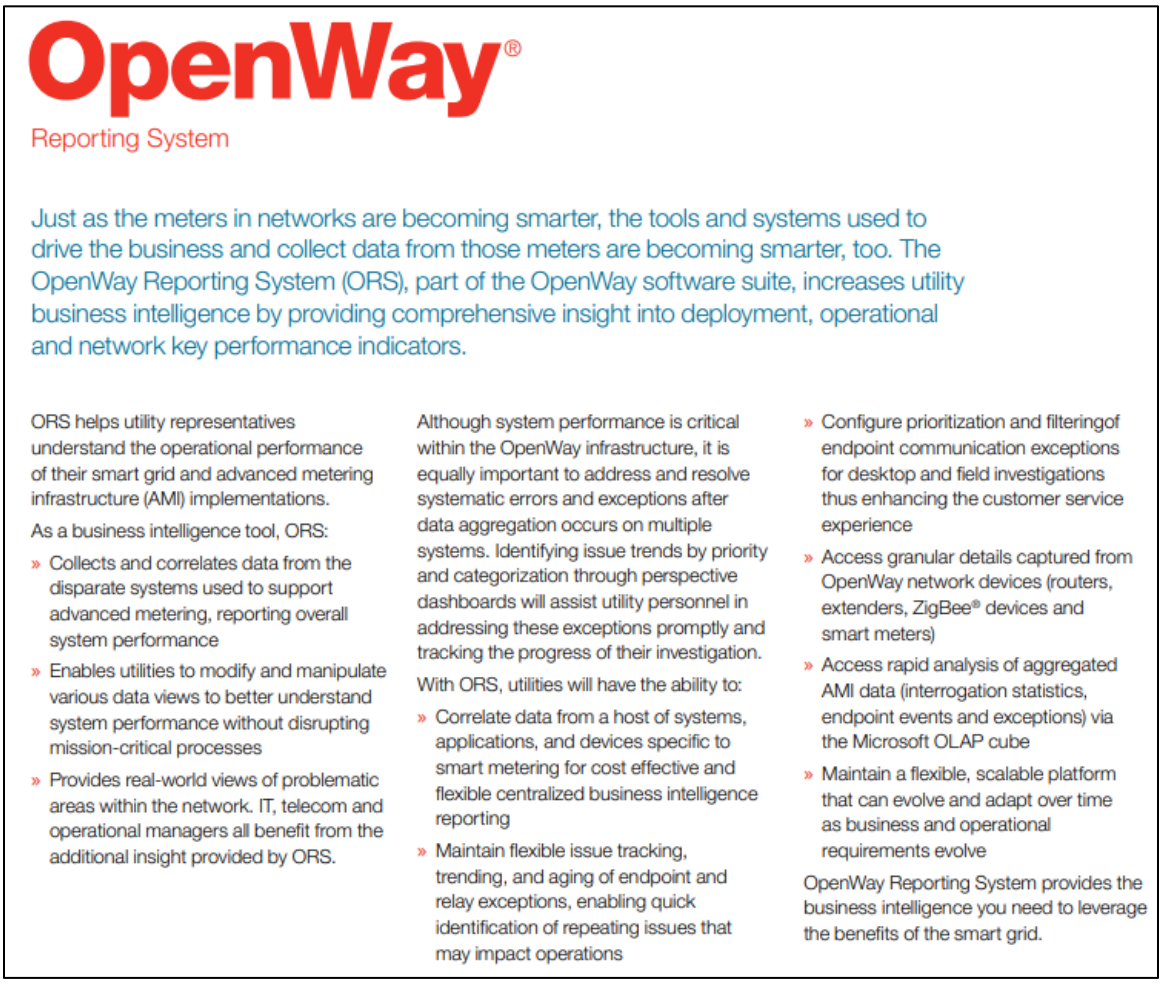

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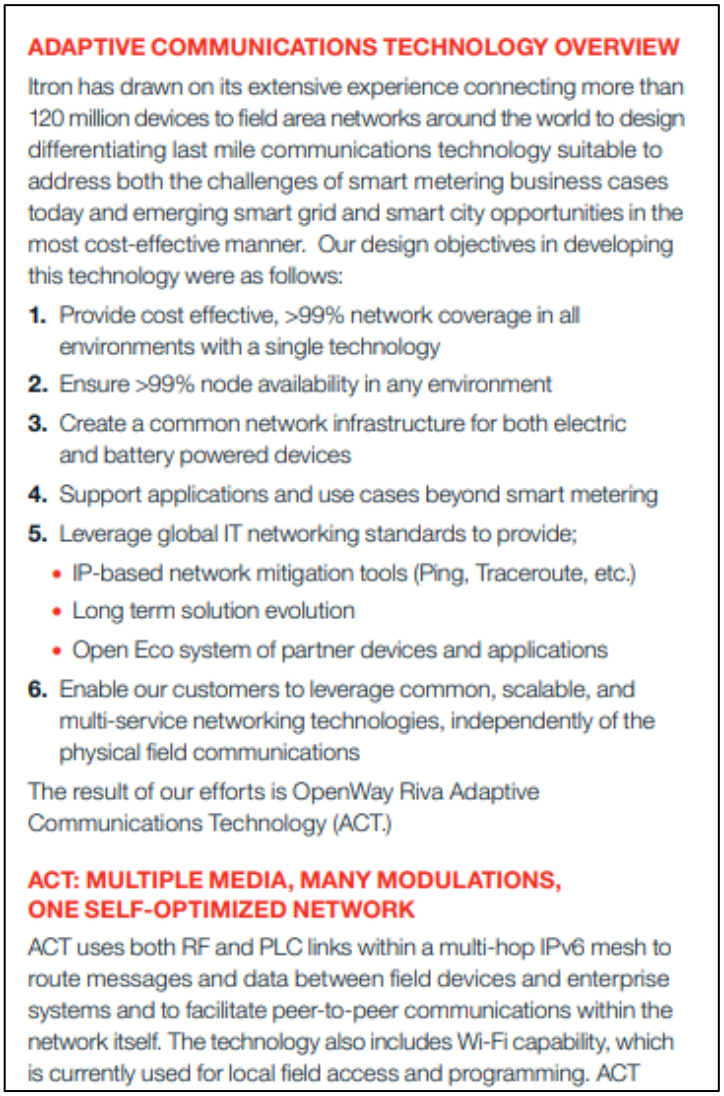

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Itron has drawn on its extensive experience connecting more than 120 million devices to field area networks around the world to design differentiating last mile communications technology suitable to address both the challenges of smart metering business cases today and emerging smart grid and smart city opportunities in the most cost-effective manner. Our design objectives in developing this technology were as follows:

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2. Ensure >99% node availability in any environment
3. Create a common network infrastructure for both electric and battery powered devices
4. Support applications and use cases beyond smart metering
5. Leverage global IT networking standards to provide;
   - IP-based network mitigation tools (Ping, Traceroute, etc.)
   - Long term solution evolution
   - Open Eco system of partner devices and applications
6. Enable our customers to leverage common, scalable, and multi-service networking technologies, independently of the physical field communications

The result of our efforts is OpenWay Riva Adaptive Communications Technology (ACT.)

ACT: MULTIPLE MEDIA, MANY MODULATIONS, ONE SELF-OPTIMIZED NETWORK

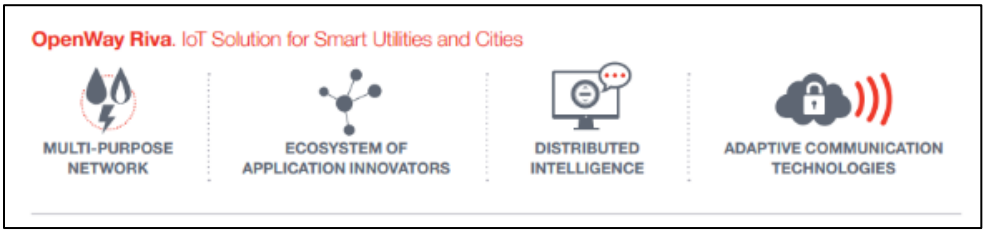
ACT uses both RF and PLC links within a multi-hop IPv6 mesh to route messages and data between field devices and enterprise systems and to facilitate peer-to-peer communications within the network itself. The technology also includes Wi-Fi capability, which is currently used for local field access and programming. ACT

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/openway-riva-adaptive-communications-technology.pdf.

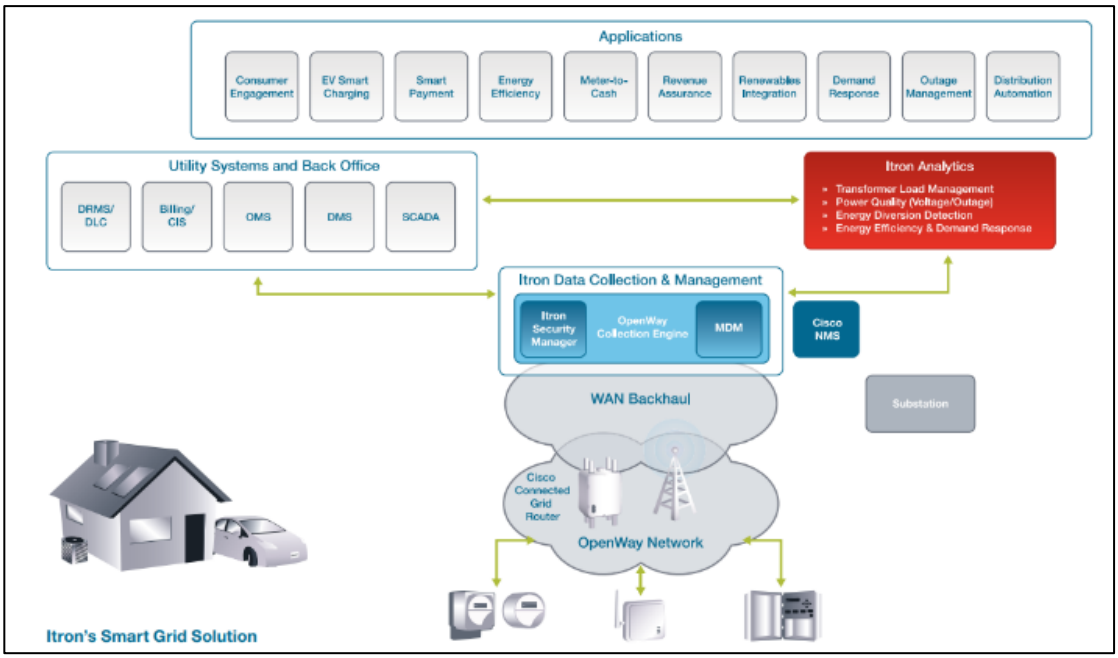
107. For example, the Accused Instrumentalities comprise smart meters, software and communications infrastructure that combines individual features of an AMI system. OpenWay is an IPv6 based multi-application network that delivers applications such as OpenWay Reporting System, OpenWay Control, OpenWay Operation Center, OpenWay Collection Engine, OpenWay Riva Security, OpenWay Riva Active Grid, OpenWay Riva Adaptive

Communications Technology to water, gas and electricity utilities. These applications provide security and network management tools to dynamically prioritize network traffic.

108. The Accused Instrumentalities perform (or otherwise contribute to, and/or Defendant induces others to perform) the step of monitoring a health of a plurality of applications using a common monitoring protocol, at least two of said plurality of applications being based on different programming technology. This element is infringed literally, or in the alternative, under the doctrine of equivalents. For example, OpenWay comprises applications such as Active Grid and Operations Center. Active grid utilizes IoT technology including machine-to-machine communications, multi-application network architecture, cloud computing and data analytics to provide resource management. OpenWay Operations Center acts as an operational hub between the metering device population and the utility back office systems and processes, such as meter data management, outage management, distribution automation and load control. Distributed components for these applications include grid devices, sensors and smart meters such as OpenWay Riva Centron meter, Adaptive Communications Technology Module and OpenWay Centron polyphase meter. The health of applications (Activation ID and Activation status) and health of corresponding distributed components (such as grid device and sensor status, Sensor ID, voltage, wattage and current level of meters) is monitored using OpenWay ("common monitoring protocol"). Upon information and belief, the applications designed by utilities showing information about fault location, sensor data, data graphs and health of substations are based on different programming technology.



Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-riva-brochure.pdf.



Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-brochure.pdf.

109. The Accused Instrumentalities further provide a common performance management interface to dynamically change a performance related configuration variable of said plurality of applications at runtime regardless of a programming technology of each of said plurality of applications. For example, Defendant provides OpenWay which comprises a dashboard ("common performance management interface") containing information about applications configured by the utilities. The Operations Center dashboard includes graphical interfacing, mapping, alerts, information and actionable recommendations ("performance related configuration variable") of applications at runtime regardless of programming technology of each application.

110. BCS has been damaged by Defendant's infringement of the '612 Patent.

COUNT III
(Infringement of U.S. Patent No. 7,533,301)

111. BCS incorporates the above paragraphs by reference.

112. Itron has been on notice of the '301 Patent at least as early as the date it received service of this Original Complaint.

113. Upon information and belief, Itron has infringed and continues to infringe Claims 1-24 of the '301 Patent by making, using, importing, selling, and/or, offering for sale the Accused Instrumentalities.

114. Defendant, with knowledge of the '301 Patent, infringes the '301 Patent by inducing others to infringe the '301 Patent. In particular, Defendant intends to induce its customers to infringe the '301 Patent by encouraging its customers to use the Accused Instrumentalities in a manner that results in infringement.

115. Defendant also induces others, including its customers, to infringe the '301 Patent by providing technical support for the use of the Accused Instrumentalities.

116. Upon information and belief, at all times Defendant owns and controls the operation of the Accused Instrumentalities in accordance with an end user license agreement.

117. By way of example, the Accused Instrumentalities infringes Claim 1 of the '301 Patent by providing a method of providing a high-level operational support system (OSS) framework by automatically discovering, with a server comprising the OSS framework, a plurality of applications that comply with a predefined framework.

The OpenWay solution is a blend of smart meters, software and communications infrastructure that combines individual features of an AMI system to deliver business value to utilities. OpenWay delivers metering applications over multiple communications substrates using the ANSI C12.22 protocol. All OpenWay meters include a high-powered ZigBee® transceiver for reliable two-way communications with in-home devices. In the back office, the OpenWay Collection Engine software communicates with a number of industry-leading meter data management (MDM) and demand response management (DRM) systems through a publicly available service-oriented architecture (SOA) interface. By focusing the Collection Engine on reliable, scalable and secure management of network communications and data delivery, a wide variety of DR systems and devices can leverage OpenWay to deliver DR programs and benefits to various market participants.

At the solution level, OpenWay enables DR by:

- Providing two-way communications for delivering DR event messages and managing DR infrastructure
- Providing advanced metering support for DR programs
- Integrating with industry-leading DR management systems, including Tendril and Comverge
- Leveraging in-home communications for a variety of DR enabling and automating devices

Itron partners integrate with OpenWay to provide the following DR program management features:

- Program design
- Event execution
- Analytics for program effectiveness

OpenWay is designed to be a flexible and scalable communications platform for enabling DR solutions. A single OpenWay network may be used with different DRM platforms. By remaining agnostic to DR programs managed by upstream systems and focused instead on application delivery, OpenWay does not limit the deployment possibilities of DR programs or system designs. As a result, OpenWay maximizes the value of a utility's existing technology investment and ensures that future program design will not be impeded by system assumptions hard-wired into the AMI network.

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/openway-demand-response-white-paper.pdf.

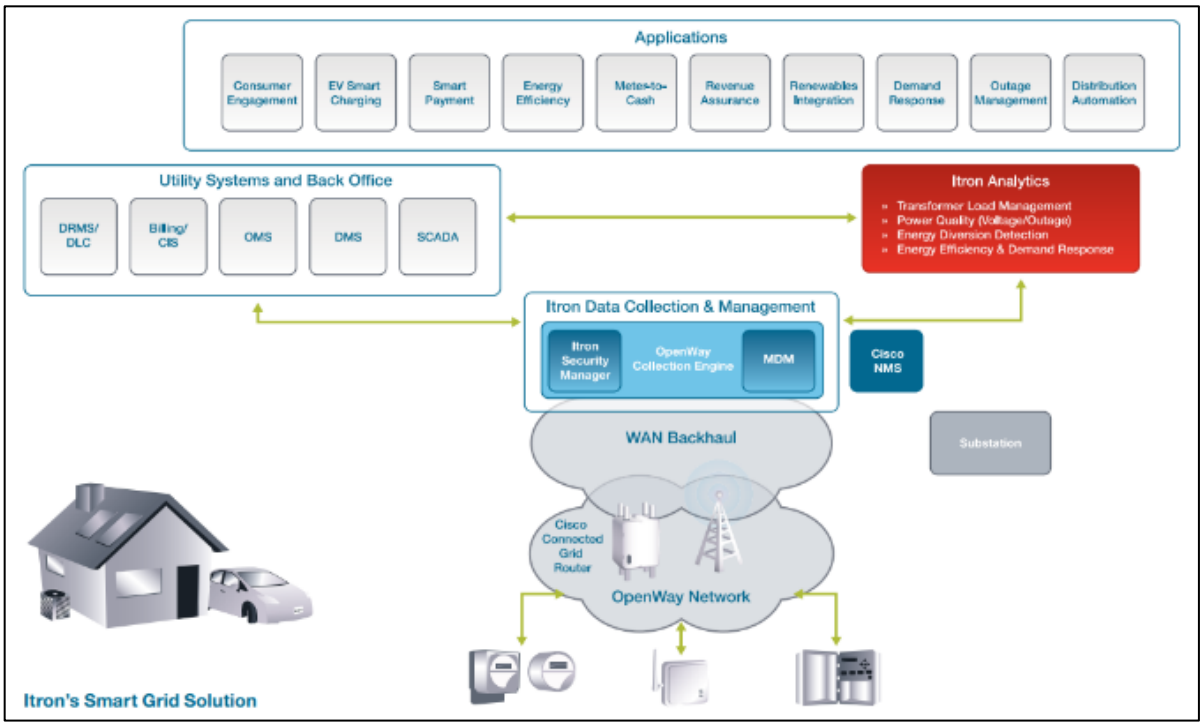
Action Manager

OpenWay Operations Center

The performance and value of any AMI operations solution is not measured by just identifying problems that occur in the field, but by the swift and efficient resolution of these problems. By attacking operational challenges using a well-coordinated operations team applying an effective set of investigative and corrective workflows, you can ensure that your AMI system is delivering strong business value consistently day in and day out.

The OpenWay Operations Center Action Manager application provides a highly innovative tool and framework to manage—and even automate—resolution of all types of exceptions and incidents at scale. Action Manager's framework provides the ability to receive externally detected faults from source systems and, based on a configurable set of priority rules, progress those faults through a designated workflow to ensure the problems are resolved in a timely, efficient and consistent manner. These workflows include both manual steps performed by individual personnel as well as automated actions executed by Action Manager. Together, these make up a logical, path-based progression that assesses state, investigates the problem and applies the appropriate corrective action.

Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-operations-center--action-manager.pdf.



Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-brochure.pdf.

OpenWay®

Reporting System

Just as the meters in networks are becoming smarter, the tools and systems used to drive the business and collect data from those meters are becoming smarter, too. The OpenWay Reporting System (ORS), part of the OpenWay software suite, increases utility business intelligence by providing comprehensive insight into deployment, operational and network key performance indicators.

ORS helps utility representatives understand the operational performance of their smart grid and advanced metering infrastructure (AMI) implementations.

As a business intelligence tool, ORS:

- Collects and correlates data from the disparate systems used to support advanced metering, reporting overall system performance
- Enables utilities to modify and manipulate various data views to better understand system performance without disrupting mission-critical processes
- Provides real-world views of problematic areas within the network. IT, telecom and operational managers all benefit from the additional insight provided by ORS.

Although system performance is critical within the OpenWay infrastructure, it is equally important to address and resolve systematic errors and exceptions after data aggregation occurs on multiple systems. Identifying issue trends by priority and categorization through perspective dashboards will assist utility personnel in addressing these exceptions promptly and tracking the progress of their investigation.

With ORS, utilities will have the ability to:

- Correlate data from a host of systems, applications, and devices specific to smart metering for cost effective and flexible centralized business intelligence reporting
- Maintain flexible issue tracking, trending, and aging of endpoint and relay exceptions, enabling quick identification of repeating issues that may impact operations
- Configure prioritization and filteringof endpoint communication exceptions for desktop and field investigations thus enhancing the customer service experience
- Access granular details captured from OpenWay network devices (routers, extenders, ZigBee® devices and smart meters)
- Access rapid analysis of aggregated AMI data (interrogation statistics, endpoint events and exceptions) via the Microsoft OLAP cube
- Maintain a flexible, scalable platform that can evolve and adapt over time as business and operational requirements evolve

OpenWay Reporting System provides the business intelligence you need to leverage the benefits of the smart grid.

Source: https://www.itron.com/-/media/feature/products/documents/spec-sheet/openway-reporting-system.pdf.

COMPREHENSIVE, END-TO-END SECURITY

Itron views security as the most critical and foundational concern in defining requirements of our smart grid-enabling architectures. Leveraging our breadth of experience in AMI deployments and projects across the globe, Itron and our strategic partner Cisco designed OpenWay Riva with an end-to-end integrated security solution using a defense-in-depth approach, where multiple layers of protection are strategically located throughout the multi-service architecture to provide the industry's most comprehensive, unified security available today.

This architecture delivers a true multi-purpose, secure communications platform for utilities and cities and protects the integrity of data, communications, and controls in an open, multi-service, multi-protocol network environment.

An iterative design process ensures that all possible threats have been addressed and mitigating measures are built into the OpenWay Riva solution. The benefit of this approach is the increased security of the system.

The OpenWay Riva solution was designed to support gas, water, electricity and smart cities by providing increased functionality, visibility and management, along with increased security. OpenWay Riva provides layered security controls and management to protect the multi-service IPv6 field area network (FAN) and all the devices and applications that run on it.

SECURITY AT THE NETWORK LAYER

The multi-service IPv6 network provides consistent security controls for all utility applications using the FAN. The FAN architecture provides unprecedented:

Access Control:

Strong authentication of nodes is achieved by taking full advantage of a set of open standards including IEEE 802.1x, Extensible Authentication Protocol (EAP) and Remote Authentication Dial-In User Service (RADIUS). This "white-listing" approach requires that every device joining the IPv6 network be authenticated before being allowed access to the network and smart metering system. Field area routers, along with intermediate meters, pass on a new device's credentials to the centralized Authentication, Authorization and Accounting (AAA) server. Once authenticated, the new device is then allowed to join the network, provided with an IPv6 address and mesh key, and will be authorized to communicate with other nodes.

Data Integrity, Confidentiality, Privacy:

The FAN employs network-layer encryption (IPsec with AES encryption) in the Wide Area Network (WAN) and link-layer encryption (AES on IEEE 802.15.4g or IEEE 1901.2) in the Neighborhood Area Network (NAN). This design choice preserves network visibility into the traffic at the router and enables use of IP-based techniques of multicast, network segmentation, and quality of service (QoS). It also allows smart meters and other endpoints to be low-cost constrained nodes that only do link-layer encryption while the field area router does both network-layer and link-layer encryption. Additional protection at the application-layer is provided by Itron's enhanced security architecture which provides confidentiality, message integrity and proof of origin (digitally signed firmware images or digitally signed commands as part of application protocols such as DLMS/COSEM) between the headend and the meter register itself.

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/openway-riva-security.pdf.

Not Just Possible; Practical and Cost-effective

All of these needs and opportunities – making our energy and water infrastructure more efficient, more reliable and less wasteful, and making our cities more functional, livable and sustainable – are readily achievable if we apply the right technology to approach problems in new ways in the Internet of Things (IoT) age. At Itron, we call this the Active Grid. It's much more than smart metering and it's more than smart grid. It encompasses electricity, gas, water and smart cities, and an entirely new frontier of opportunity.

The Active Grid leverages significant recent advancements in Internet of Things (IoT) technology, including distributed intelligence; machine-to-machine communications; multi-application network architecture; cloud computing; data analytics; and a new generation of battery-powered edge devices and sensors to deliver an entirely new level of awareness into the state of the distribution network. All this means we can achieve resource management outcomes than were simply not possible just a few years ago.

One Network, Many Applications

First, the Active Grid requires a unified, scalable, multi-purpose IoT network infrastructure for smart utilities and cities. This means that once the network is deployed, it's very easy and cost effective to expand the value of the network investment over time by adding new capabilities. This standards-based IPv6 multi-application network separates the network infrastructure from the devices and applications that run on it. This means that new devices and applications can be added easily to the network, just like a new laptop or a printer would be added to an enterprise-class IT network. It also provides standardized, robust security, state-of-the-art network management and quality of service to optimize network operations and dynamically prioritize network traffic based on application and business requirements for an IoT world. All while utilizing a common and existing IT skill set to keep operations simple and support costs under control.

Source: https://www.itron.com/-/media/feature/products/documents/white-paper/active-grid-white-paper.pdf.

As migration toward urban centers increases, cities are under increasing pressure to manage resources more effectively, and utilize new technology to make the urban landscape more livable, sustainable and economically vibrant. Today's challenges require a solution built for the Internet of Things world. Itron calls this the **Active Grid** or **Active Network** – both referring to the infrastructure being utilized by electric, water, and gas utilities and smart cities. The Active Grid leverages significant advancements in IoT technology, including distributed intelligence; software-defined communications; multi-application networks; cloud computing; data analytics; and a new generation of battery-powered edge devices and sensors to achieve new and better outcomes that were simply not possible just a few years ago.

These technologies come together in Itron's OpenWay Riva — an IoT solution that delivers new and differentiating value to enable smart utilities and cities. Utility smart metering may often provide the initial impetus for network infrastructure investment, but the benefit stream can be broadened significantly and at a manageable incremental cost with the right building blocks in place. The OpenWay Riva IoT solution was developed on four key tenets that, when applied together, redefine what is possible for the Active Grid.

ONE MULTI-PURPOSE NETWORK, MANY APPLICATIONS

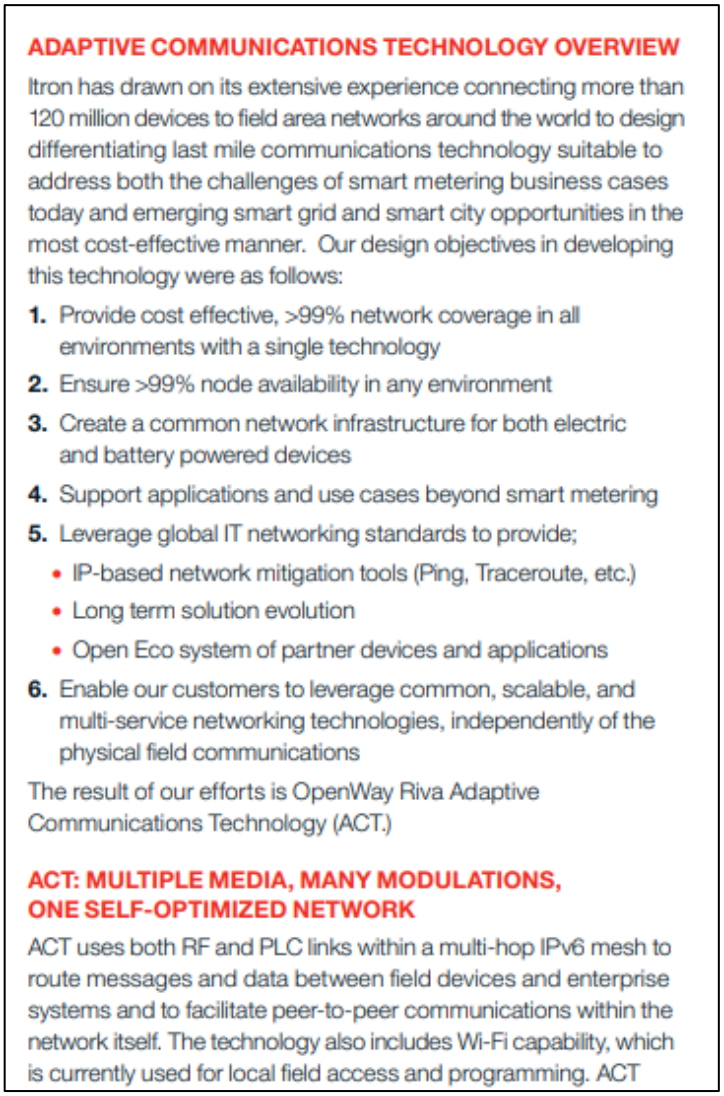
The OpenWay Riva solution provides utilities and cities with a unified, scalable, multi-purpose IoT network infrastructure. This means that once the network is deployed, it's easy and cost effective to expand the value of the network investment over time. This standards-based IPv6 multi-application network, jointly developed by Itron and Cisco, separates the network infrastructure from the devices and applications that run on it. This means that new devices and applications can be added easily to the network, just like a new laptop or a printer would be added to an enterprise-class IT network. It also provides standardized, robust security; state-of-the-art network management tools; and quality of service to dynamically prioritize network traffic based on application and business requirements for an IoT world — all while utilizing a common and existing IT skill set to keep operations simple and support costs under control.

As previously discussed, Itron is actively developing new distributed analytic applications for water, electricity, gas and smart city use cases. In the Active Grid smart metering is just one app running on the multi-purpose network.

OPEN ECOSYSTEM OF APPLICATION INNOVATORS

Itron's networks have been architected to provide an open application, interoperable environment that enables third-parties to embed IoT communications into their devices, or to develop apps to run on the platform. Itron's Partner Ecosystem provides a common end-to-end engagement platform that includes hardware and software development kits to help solution providers enable their solutions to perform on Itron networks. This robust ecosystem of developers and applications means that utilties and cities are not reliant on a single vendor for product innovations. Itron is committed to helping a broad variety of device and sensor manufacturers work more easily together to bring new applications and greater value faster to market for our customers.

Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-riva-brochure.pdf.



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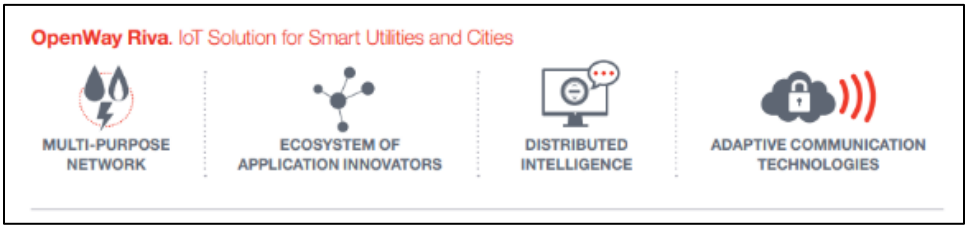
118. For example, the Accused Instrumentalities comprise smart meters, software and communications infrastructure that combines individual features of an AMI system. OpenWay is an IPv6 based multi-application network that delivers applications such as OpenWay Reporting System, OpenWay Control, OpenWay Operation Center, OpenWay Collection Engine, OpenWay Riva Security, OpenWay Riva Active Grid, OpenWay Riva Adaptive

Communications Technology to water, gas and electricity utilities. These applications provide security and network management tools to dynamically prioritize network traffic.

119. The Accused Instrumentalities perform (or otherwise contribute to, and/or Defendant induces others to perform) the step of automatically discovering, with a server comprising said OSS framework, a plurality of applications that comply with a predefined framework. For example, OpenWay comprises smart meters, software and communications infrastructure that combines individual features of an AMI system. It comprises various applications such as Active Grid and Operations Center. The utilities configure a solution according to their needs. OpenWay automatically discovers the configuration of the utilities from a server and provides corresponding applications to the utilities depending upon the available communication and metering infrastructure.



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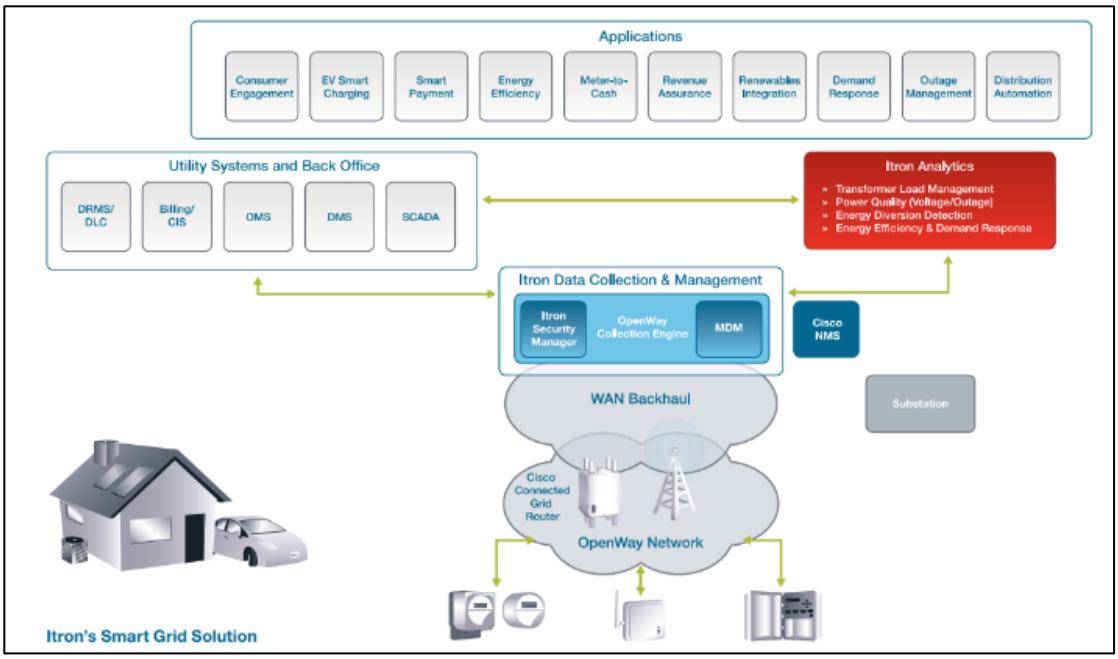

Source: https://www.itron.com/-/media/feature/products/documents/brochure/openway-brochure.pdf.

120. The Accused Instrumentalities perform the step of providing for a high level of management, by said server comprising said OSS framework, of said plurality of applications dynamically at runtime regardless of a platform technology utilized by any particular application from said plurality of applications. For example, OpenWay provides high level of management of applications such as OpenWay Operations Center and Active Grid. OpenWay comprises a dashboard containing information about applications configured by the utilities. The Operations Center dashboard includes graphical interfacing, mapping, alerts, information and actionable recommendations of applications at runtime regardless of programming technology of each application.

121. BCS has been damaged by Defendant's infringement of the '301 Patent.

PRAYER FOR RELIEF

WHEREFORE, BCS respectfully requests the Court enter judgment against Defendant:

1. declaring that the Itron has infringed each of the Patents-in-Suit;

2. awarding BCS its damages suffered as a result of Itron's infringement of the Patents-in-Suit;

3. awarding BCS its costs, attorneys' fees, expenses, and interest;

4. awarding BCS ongoing post-trial royalties; and

5. granting BCS such further relief as the Court finds appropriate.

JURY DEMAND

BCS demands trial by jury, under Fed. R. Civ. P. 38.

Dated: December 29, 2019

Respectfully Submitted

/s/ M. Scott Fuller

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